

REMARKS/ARGUMENTS

Applicant acknowledges receipt of the Office Action dated August 31, 2007, in which the Examiner rejected claims 1-4 and 6-9 as obvious in view of BP 2320270 ("Armell) in view of US 2238377 ("Strang").

Claim Objections

Examiner objects to claims 1-9 due to informalities and suggests a specific correction. Applicants has changed the phrase "the cutting arm" to "the at least one cutting arm" in claims 1-4, 6, and 7. Applicants respectfully request that the objection to the claims 1-4 and 6-9 be withdrawn.

Claim Rejections Under 35 U.S.C. §102

In support of the rejection, the Examiner asserts that Strang includes a support means that "is arranged to transmit at [least] a majority of the rotational torque and axial loads generated during drilling from a cutting arm to the bit body." Applicant respectfully submits that, while it is true that Strang provides a support surface (seat 9) that may relieve axial loads on the pin 8, *i.e.* loads parallel to the bit axis, it is not possible for seat 9 to transmit rotational torque.¹

By contrast, claim 1 has been amended to require on the axial end surface of the body a profile for transmitting torque from the cutting arm to the bit body. One exemplary embodiment of the claimed element is disclosed in the present specification as being a toothed interface between lock-ring 12 and grooves 14. As can be seen, such an interface would allow direct transmission of torque. As further disclosed in the specification, other profiles can be constructed that would allow transmission of rotational torque from the cutting arm to the bit body.

¹ Torque is defined as the tendency of a force applied to an object to make it rotate about an axis. For a force applied at a single point, the magnitude of the torque is equal to the magnitude of the force multiplied by the distance from its point of application to an axis of rotation, *The American Heritage® Science Dictionary*. Retrieved December 03, 2007, from Dictionary.com website: <http://dictionary.reference.com/browse/torque>. In the context of the claimed invention, "rotational torque" will be understood to refer to force applied by the formation to the extended cutter arms as the bit is rotated. This force is normal to the bit axis and applied at the radius of the cutter arm ends.

Because none of the references cited by the Examiner teaches a support means that can transmit rotational torque from the cutting arm to the bit body, the combination of the references does not produce a device meeting the limitations of claim 1. Claims 2-3 and 6-9 depend from claim 1 and are therefore allowable for, *inter alia*, the reasons set out above.

New claims

New claims 10-12 have been added, which recite, respectively, that the profile includes teeth, that the profile includes a stepped profile, and that the cutting arm does not engage the profile when the cutting arm is not in said radially expanded position. These claims are supported in the specification as-filed and therefore do not constitute new matters. The claims are allowable at least because they depend from claim 1, and also because they recite limitations not disclosed in the references.

Conclusion

Applicants have addressed each ground for rejection. The amended claims are patentable over the cited art and Applicants request that the application be allowed. In the event the Examiner has any questions or there are any issues with respect to the application, the Examiner is invited to telephone the undersigned at the telephone number below prior to the issuance of any written action.

Respectfully submitted,
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